

# การพัฒนาแหล่งเรียนรู้ด้านภูมิปัญญาท้องถิ่นของเยาวชนในพิพิธภัณฑ์ศิลปวัฒนธรรมจังหวัดเลย

## Local Wisdom Learning Resources for Youths in the Museum of Art&Culture of Loei

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### บทคัดย่อ

งานวิจัย เรื่องการพัฒนาแหล่งเรียนรู้ด้านภูมิปัญญาท้องถิ่นของเยาวชนในพิพิธภัณฑ์ศิลปวัฒนธรรมจังหวัดเลย เป็นงานวิจัยเชิงพัฒนาทดลอง มีวัตถุประสงค์เพื่อ (1) พัฒนาพิพิธภัณฑ์ศิลปวัฒนธรรมจังหวัดเลยเป็นแหล่งเรียนรู้ด้านภูมิปัญญาท้องถิ่นของเยาวชนในจังหวัดเลย (2) ศึกษาผลสัมฤทธิ์การเรียนรู้ด้านภูมิปัญญาท้องถิ่นของเยาวชนในแหล่งเรียนรู้พิพิธภัณฑ์ศิลปวัฒนธรรมจังหวัดเลย โดยมีขั้นตอนการดำเนินการ 6 ขั้นตอน ได้แก่ (1) การศึกษาบริบทเนื้อหาจัดแสดงของพิพิธภัณฑ์ (2) การวางแผนการจัดการเรียนรู้สำหรับเยาวชนที่เป็นกลุ่มเป้าหมาย (3) การพัฒนาสื่อและการจัดการเรียนรู้ในแหล่งเรียนรู้พิพิธภัณฑ์ (4) การจัดการเรียนรู้ให้กับกลุ่มเป้าหมาย (5) การประเมินผลสัมฤทธิ์การเรียนรู้หลังจากเข้าชมพิพิธภัณฑ์ (6) สรุปแนวทางการพัฒนาแหล่งเรียนรู้พิพิธภัณฑ์ กลุ่มเป้าหมายของงานวิจัยนี้ ได้แก่ บุคลากรพิพิธภัณฑ์ 2 คน ผู้ทรงคุณวุฒิด้านความรู้ท้องถิ่น 2 คน ครูผู้สอน 3 คน เพื่อการศึกษาข้อมูลและการพัฒนาแหล่งเรียนรู้ในพิพิธภัณฑ์โดยการสัมภาษณ์ และกลุ่มเป้าหมายเยาวชนที่สุ่มตัวอย่างมา 402 คน ที่เป็นผู้เรียนของแหล่งเรียนรู้และการทดสอบผลสัมฤทธิ์การเรียนรู้ด้วยการทำข้อสอบหลังการเรียนรู้ โดยแบ่งเป็นระดับประถมศึกษาและมัธยมศึกษา 319 คน และระดับอุดมศึกษา 83 คน

พิพิธภัณฑ์ศิลปวัฒนธรรมจังหวัดเลย มีการจัดแสดงเกี่ยวกับวัฒนธรรมและทรัพยากรท้องถิ่นของจังหวัดเลย มีกลุ่มเป้าหมายหลักคือกลุ่มนักเรียนนักศึกษาในพื้นที่จังหวัดเลย เนื้อหาจัดแสดงในพิพิธภัณฑ์ที่เลือกมาเป็นสาระการเรียนรู้ในงานวิจัยนี้ จำนวน 10 เรื่อง ได้แก่ ภูมิประเทศของจังหวัด แหล่งแร่ธาตุ ฟอสซิลไดโนเสาร์ เครื่องมือหินโบราณ ภาพเขียนสีในถ้ำ ไบเซมาหิน พระธาตุศรีสองรัก จารึกวัดห้วยท่าว พระบางชายขาว กลุ่มชาติพันธุ์ ถูกนำมาเรียบเรียงเพื่อให้เนื้อหาที่มีความเชื่อมโยงตามลำดับเหตุการณ์ เนื้อหาจัดแสดงมีความสอดคล้องกับสาระการเรียนรู้แกนกลางสำหรับนักเรียนระดับประถมศึกษาและมัธยมศึกษา คือกลุ่มสาระภูมิศาสตร์และกลุ่มสาระประวัติศาสตร์ และในระดับอุดมศึกษาคือ วิชาไทยเลขศึกษา มหาวิทยาลัยราชภัฏเลย การพัฒนาสื่อและกระบวนการเรียนรู้ของสาระทั้ง 10 เรื่อง ครอบคลุมถึง วัตถุประสงค์การเรียนรู้ รูปแบบการจัดการเรียนรู้ ทรัพยากรและสื่อการเรียนรู้ เช่น สื่อจัดแสดง สื่อบรรยาย สื่อสิ่งพิมพ์ และการประเมินผลการเรียนรู้ในด้านความรู้ของผู้ชม

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การประเมินผลสัมฤทธิ์การเรียนรู้ของเยาวชนหลังจากที่เข้าชมพิพิธภัณฑ์พบว่า จากคะแนนเต็ม 20 คะแนน กลุ่มนักเรียนประถมและมัธยมศึกษา มีคะแนนเฉลี่ยร้อยละ 71.30 ( $\bar{X} = 14.26$ ,  $SD = 2.84$ ) และกลุ่มนักศึกษาระดับอุดมศึกษา ได้คะแนนเฉลี่ยร้อยละ 83.00 ( $\bar{X} = 16.60$ ,  $SD = 2.04$ ) และคะแนนเฉลี่ยโดยรวมร้อยละ 73.70 ( $\bar{X} = 14.74$ ,  $SD = 2.85$ )

**คำสำคัญ :** แหล่งเรียนรู้, พิพิธภัณฑ์เพื่อเยาวชน

## Abstract

This study, "Local Wisdom Learning Resources in the Museum of Art&Culture of Loei", is a developmental research project. The objectives include (1) develop the Loei Museum of Art&Culture to become a learning resource of local wisdom for youths in Loei and (2) determine the learning outcome of youths who attended the learning process. There are 6 steps in the study: (1) studying contexts of the museum and its exhibits, (2) creating a learning plan for the youths (3) developing learning media in the museum, (4) assess the learning process for the target group, (5) evaluating learning outcome, (6) summarizing guides for developing the museum as a learning resource. The target groups for studying and developing the learning resources in the museum included 2 museum officers, 2 experts in local wisdom, 3 school teachers. The target groups for learning and evaluating the learning outcome consisted of 2 groups: 319 students in elementary and secondary schools, and 83 college students, totaling 402 students.

The Museum of Art&Culture of Loei exhibits Loei's local culture and resources. The main target group of the museum is the students from the local schools. The museum serves as a learning resource and a tourist attraction in the province. Ten exhibits in the museum were chosen for this research: local geography, mineral resources, dinosaur footprint fossils, ancient stone tools, cave paintings, stone inscriptions, Sisongrak stupa, the stone inscription of Huai Hao temple, Buddha image of Sai Kao, and local ethnic groups. The contents were arranged chronologically for cohesion. They agree with the national core contents for elementary and secondary schools and Thai Loei studies course at Loei Rajabhat University. Development of the media and learning process for the contents cover the learning objectives; learning models; learning media and resources such as exhibits, presentations, and printed materials; and learning outcome evaluation.

The learning outcome of the youths was tested after their museum visits. From the full score of 20, the elementary and secondary students average score was 71.30 percent ( $\bar{X} = 14.26$ ,  $SD = 2.84$ ). The college students average score was 83.00 ( $\bar{X} = 16.60$ ,  $SD = 2.04$ ). The overall average score was 73.70 ( $\bar{X} = 14.74$ ,  $SD = 2.85$ ).

**Keywords:** learning resources, museum for youths

## Introduction

Museums serve as learning resources and tourist spots that exhibit various topics, such as, local wisdom, ethnic groups, important figures, nature, etc. There are more than 1200 museums registered in Thailand (Price Maha Chakri Sirindhorn Anthropology Center, 2002), although only some of them are fully operational. The operation of the museums is based on the need of the owners to present what they have (supply side) which sometimes is insufficient. Rather, the museums should give consideration to what their visitors want (demand side), such as, content, facilities, and services. Responding properly to visitors' interests helps the museums reach their marketing goals.

Besides being tourist attractions, entertaining, and preserving valuable items, one of the crucial roles of the museums is providing learning resources for the community. The museums need to set specific goals and operational plans to provide education, especially to the youths from local schools, who are the main target group of the museum. Regarding the Museum of Art&Culture of Loei, 78.5 percent of the visitors are youths from local schools (Phuangjan, Kamsai, Sanprasit, & Chaiwong, 2012). They visit the museum to learn about the local wisdom of Loei. Similarly, the teachers who bring them to the museum expect their students to learn what the museum has to present. It's necessary for the museum to provide proper instruction process that includes learning content, teaching techniques, instructional media, learning outcome assessment. Most museums emphasize artifacts conservation, tourist attrac-

tions, and exhibitions, rather than instruction, even though the major group of visitors is students whose main purpose is to learn. Studying the museum's visitor is a mean of exhibition assessment and visitor study (Kotler, 2008) that could help the museum improve its operation. Development of the museum should take the needs of the visitors into serious consideration. This research aimed to develop the museum as a learning resource for students including learning management and learning outcome assessments. The Museum of Art&Culture of Loei serves as a case study for this research.

## Research Objectives

This study was aimed at 2 objectives (1) developing the Museum of Art&Culture of Loei to become a learning resource of local wisdom for youths in Loei and (2) identify the learning outcome of the youths who attended the learning process.

## Conceptual framework

This study is developmental research. It was aimed to develop the museum to become a learning resource by employing the concept of educating with exhibitions and curating in the museum context. Learning occurred while visiting the museum according to the learning objectives, then learning achievement was assessed.

There are 4 elements (Valaya Alongkorn Rajabhat University, 2010) involved in educating in a museum: (1) contents and learning objectives; (2) learning models and teaching methods; (3) instructional media; (4) learning

assessment. The teaching plan should comply with these four elements under a museum context which is inherently different from the classroom environment. Differences include the exhibits, the operation and services, the museum administration and constraints, the students or visitors, and teaching techniques.

## Research Methods

### Target groups

There are 2 related parts in this study, according to the research objectives. The first one involves developing learning resources in the museum, and the second one involves assessment of the learning achievement of the visitors. Accordingly, the samples of the two parts include: (1) the samples for developing learning resources, such as, 2 museum staffs, 2 scholars, 3 school teachers, 402 students; (2) the samples for learning achievement assessment, 402 students from local institutes in Loei including 319 elementary and secondary school students and 83 college students. The purposive sampling technique was used. The population consisted of students from educational institutes in Loei including 72,195 students from elementary and secondary schools and 18,522 students from 31 college students.

### Research Procedures and Data Collection

Development of the learning resources employs the aforementioned 4 elements as a guide. The research procedures include 6 steps, of which the samples and data collection method are as follows:

1. Context study. The data for the context of the Museum of Art&Culture of Loei, the

exhibits showed in the museum were collected by interviewing 2 museum staffs.

2. Teaching plan. The data for studying the agreement between the exhibitions in the museum and the contents in the classrooms were collected by interviewing 2 school teachers, and 1 scholar. The planning for contents, learning purposes, and teaching plan were done by studying documents and interviewing 2 local scholars.

3. Development of the instructional media. This includes designing and re-making of the instructional media for 10 exhibits in cooperation with 2 museum staffs.

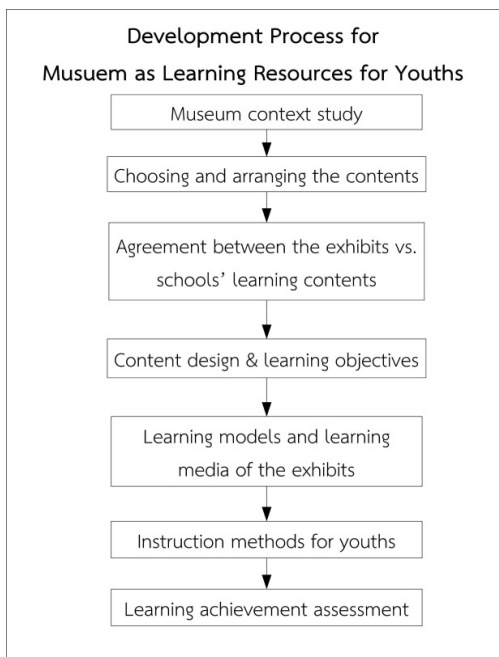
4. Educating the target groups. This implemented the teaching plan with 2 museum staffs by educating 402 visitors who are school students via the museum exhibitions and curation.

5. Assessment of learning achievement. After learning in the museum, the visitors took a test, of which Item-object Congruence (IOC) was analyzed by the experts.

6. Data analyzing and summarizing. The guide of developing the learning resources and educating in the museum was summarized. Also, the assessment of the learning achievement result was presented in terms of mean scores and standard deviations.

## Results

The development of learning resources in the museum process can be summed up into 7 steps as shown in Figure 1.



**Figure 1.** The development process of learning resources for youths in the museum.

### Step 1. Museum context study.

The Museum of Art&culture of Loei (MA-LOEI) is located in Loei Rajabhat University. The museum operates under the university's Office of Art and Culture administration, budget, and staffs. It serves the Office's mission and strategy of providing learning resources concerning art and culture for the community. Besides, the museum is one of the main cultural tourist attractions in the province. The museum is in a two-story building with the usable area of 431 m<sup>2</sup>. The facilities include an auditorium, a parking lot, a public toilet, a library, and two exhibition halls. The museum exhibits the province's major cultural and natural resources, such as, pre-historic cave paintings and stone tools, dinosaur's footprint, Boon Luang and Phi Ta Kon festival, Prabang Sai Kao (local Buddha image), Sisongrak Stupa model, palm leaves manu-

scripts, stone inscriptions, models of local housing, local dressing models, local ethnic groups, local ores and mining, local geography model, local famous figures, and cotton cloths. Each year, the museum serves 4000-7000 visitors, most of which are students from local schools.



**Figure 2.** The Museum of Art&culture of Loei located in Loei Rajabhat University.

### Step 2. Choosing and arranging the contents.

Ten topics were chosen from the existing exhibits, such as local geography, local ores and mining, dinosaur's footprint, pre-historic cave paintings and stone tools, stone inscriptions, Sisongrak Stupa, Huai Hao ancient temple's stone inscription, Pra Bang Sai Kao, and local ethnic groups. These exhibits were to be used for research and development in this study.

### Step 3. The agreement between the exhibits' contents and the schools' learning contents.

The needs for learning of the targeted visitors are essential for the museum to respond properly. The teachers and students visit the museum and learn what they want and whether they agree with the curriculum in their schools.

There are 8 mandatory contents that all schools in the country have to comply with: Thai language, mathematics, science, social studies, religion and cultures, personal hygiene and physical education, arts, handicrafts and technology, and foreign languages. These contents were designated in the national core curriculum (Bureau of Academic Affairs and Educational Standards, 2008). The study found that 10 contents in the museum agree with the core curriculum for elementary and secondary schools in 2 groups of contents: history (S 4.1, S 4.2, S 4.3) and geography (S 5.1, S 5.2). In terms of learning contents, the number of learning contents for Pratom 1 (the first grade) up to Matayom 6 (the twelfth grade) students agreed with the 10 exhibits in the museum, as shown in Table 1.

**Table 1.** Number of learning contents in elementary and secondary schools curriculum agreeing with the contents in the museum.

| Exhibit contents            | Number of learning contents |
|-----------------------------|-----------------------------|
| Local Geography             | 10                          |
| Local ores and mining       | 5                           |
| Dinosaur's footprint        | 4                           |
| Cave paintings              | 15                          |
| Ancient stone tools         | 15                          |
| Stone inscriptions          | 18                          |
| Sisongrak stupa             | 21                          |
| Huai Hao temple inscription | 25                          |
| Prabang Sai Kao             | 25                          |
| Local Ethnic groups         | 27                          |

Local studies and curriculum at higher education institutions are different at each university. The contents are stipulated in the course descriptions. For Loei Rajabhat University, the sample for this study, contents in the museum agree with the contents in **Tai Loei studies**, a social studies course in the general education group. It was found that the history part in the course agrees with 6 contents shown in the museum such as cave paintings, ancient stone tools, Sisongrak stupa, Huai Hao temple inscription, Prabang Sai Kao, and local ethnic groups. While the culture part of the course agrees with 5 contents in the museum: stone inscriptions, Sisongrak stupa, Huai Hao temple stone inscription, Prabang Sai Kao, and local ethnic groups.

#### **Step 4: Content design and learning objectives.**

For proper learning with specific goals, the museum needs to state its learning content and learning objectives clearly. It is the museum's obligation to provide teaching or exhibiting to serve the learning objectives, as well as learning assessment. To design the contents, the museum needs to check the agreement with the curriculum in local schools. The contents in the museum have to match with the contents in the schools, as well as the students' needs for learning. It's important to take into consideration both the demand side and the supply side. The learning plans need to consider teaching models, instructional methods, and learning media.

The contents of 10 exhibits were set and their learning objectives were designated. For example, there are 2 learning objectives for the local geography exhibit: (1) the students can explain the boundary and adjacent area of the

province; (2) the students can identify major geographic features such as mountains, and rivers. By stating the learning objectives clearly, the museum can realize its own roles and goals, as well as the visitors' need for learning. These can help the media and exhibition design.

Cohesion among the contents of the exhibits is crucial, so the overall theme of the exhibition can be understood. The storyline method (Kaemmani, 2011) of teaching was employed for this. The contents were put in chronological order according to their occurrences. The local geography, the ores and mining, and the dinosaur fossils are several hundred million years old, followed by the prehistoric events with approximately two thousand years old ancient cave paintings, and the stone tools. The historic events include the stone inscriptions, Sisongrak stupa, Huai Hao ancient temple's stone inscription, Sai Kao's Buddha image and the local ethnic groups, respectively. The timeline can help the visitors grasp the chronological order of the events and relationship among the events.

#### **Step 5. Learning Models and Learning Media of the Exhibits.**

Design and development of the exhibitions employed various learning models to create learning media. Most exhibits use varieties of learning media to enhance the learning of the visitors depending on their contents. Table 2. shows learning models and learning media of the 10 exhibits.

#### **Step 6. Instruction method for youths**

In the context of this study, the museum visiting is a learning process for the visitors. The learning processes in the museum include introductory briefing in the auditorium, reading

and self-observation in the exhibition rooms, and questioning and answering between the visitors and the curator. Each process requires different media and learning activities. The exhibitions are the main part of the learning. Youths can read and observe by themselves in the exhibition rooms as shown in Figure 2.

**Table 2.** Learning models and learning media of the exhibits in the museum.

| Exhibit contents            | Learning Models             | Learning Media                                |
|-----------------------------|-----------------------------|---|
| Local geography             | Memory, Graphics            | 3D model, PowerPoint                          |
| Local ores and mining       | Memory, Graphics            | Maps, signs, artifacts, PowerPoint            |
| Dinosaur's footprint        | Memory, Graphics, Storyline | 3D Model, robot, PowerPoint                   |
| Cave paintings              | Memory, Graphics, Storyline | Maps, signs, paintings, PowerPoint            |
| Ancient stone tools         | Memory, Graphics, Storyline | Maps, signs, paintings, PowerPoint            |
| Stone inscriptions          | Memory, Graphics            | Maps, signs, paintings, timelines PowerPoint  |
| Sisongrak stupa             | Memory, Graphics, Storyline | 3D model, maps, signs, paintings, PowerPoint  |
| Huai Hao temple inscription | Memory, Graphics, Storyline | Artifacts, signs, maps, paintings, PowerPoint |
| Prabang Sai Kao             | Memory, Graphics, Storyline | 3D model, signs, paintings, PowerPoint        |
| Local ethnic groups         | Memory, Graphics, Storyline | Paintings, signs, maps                        |



**Figure 2.** Youths learned by reading and self-observation in the museum.

### Step 7. Learning achievement assessment.

After the museum visits, the learning of the youths was evaluated with a 20-item test. Each item was tested its congruence with the learning objectives by IOC (Item-Objective Congruence) method. Five experts evaluated the IOC index of each item. All 20 items of the test were proved to be valid.

There were 402 samples of the visitors that were tested with the full score of 20 to determine learning achievement. Table 3 shows that the youths at higher education level get slightly higher average scores than those at elementary and secondary level. The overall average score is 73.70 percent ( $\bar{X} = 14.74$ ,  $SD = 2.85$ ).

**Table 3.** The learning achievement score of the youths who visited the museum.

| Youth groups         | Number (students) | Average Scores | S.D. |
|----------------------|-------------------|----------------|------|
| Elementary-secondary | 319               | 14.26          | 2.84 |
| Higher Education     | 83                | 16.60          | 2.04 |
| Overall              | 402               | 14.74          | 2.85 |

## Discussion and conclusion

The museum development in this study emphasizes the role of the museum as a learning resource in addition to conserving artifacts and reserving local art and cultures. Silprasert (2014) states that the values of Baan Ku Bua Museum include disseminating local wisdom, conserving local identity and gathering local knowledge. Particularly, the Museum of Art&Culture of Loei whose target group is the youths in local schools give its priority to educating local knowledge to the youths with efficiency and effectiveness. Like the formal education in schools, the museum needs to employ instruction models and methods for the young visitors.

At first, the context of the museum needs to be studied in many aspects such as administration, staff, budget, facilities, and services like exhibitions and curation. Understanding and responding to the needs of the visitors is the marketing basis. According to Kotler, Kotler, & Kotler. (2008), the attributes and the behaviors of the visitors help the museum to make proper operating decisions and proper responses. For school children, the museum needs to respond to their needs for learning in terms of proper contents that agree with the contents taught in their schools. In this study, the Museum of Art&Culture of Loei studied the standard curriculum of the Ministry of Education and figured out which contents in the museum agree with the Geography and History subjects in the school curriculum. Wacharaboon (2011) suggests in her study that the contents shown in youth museums should serve the needs of the students and agree with the school curriculum in order to



provoke off-school learning experiences. This can be done by selecting and exhibiting the contents that agree with their needs.

By letting the teachers and students take part in learning plan and exhibition design, the museum can enhance agreement between the exhibition contents and the school curriculum, and share the learning objectives. The schools can integrate the contents in the museum to their curriculum. Srisang (2005) recommends for providing lifelong learning at the museum that the museum should cooperate with the school to create local curriculum by incorporating the contents in the schools with those in the museum.

For educational purpose, the museum should realize the role of being a learning resource center for youths. It needs to apply the concept of teaching in their operation such as making learning plans, learning objectives. These can help the museum clarify their goals of providing education and gain higher learning achievement of their visitors.

The museum can use varieties of learning media such as 3D models, graphics, pictures to enhance learning effectively. Kusipitak (2013) mentions multi-dimension with various media and senses, including self-learning from the exhibitions; creating learning with fun and relaxing environments; the interaction between the visitors and the curators. These are called transformative learnings. Juthaket (2013) states that the museum design requires various forms of media, emphasizing highlights, and arousing interests.

For learning achievement of the youths, who are the target group of learning resources, the students got an average score of 73.70. With a similar result, Yodkaew, Poonsawad, & Suksakul (2010) developed the National Museum Pra Pathom Jedi as learning resources, and the average score of the learning achievement of the visitors was 74.00.

## References

- Bureau of Academic Affairs and Educational Standards. (2008). *Learning Index and Core Contents of Social Studies, Religions and Culture*. Bangkok: Ministry of Education. 1.
- Jutaket A. (2013). Museums as Lifelong Learning Resources. *ASA journal*. 2th. 62.
- Kaemmani T. (2011). *Learning Models: Various Choices*. Bangkok: Chulalongkorn University Press. 54.
- Kotler N. (2008). *Museum Marketing and Strategy*. San Francisco: Jossey-Bass.
- Kotler, P. Kotler, G.N. & Kotler, I.W. (2008). *Marketing and Strategy: Designing Missions, Building Audiences, Generating Revenue and Resources*. San Francisco: Jossey-Bass.
- Kusipitak P. (2013). Multi-dimensional Communication through six senses for transformative learning in the museums. *Journal of Communications Arts*. 17 (January – June). 199.
- Princess Maha Chakri Sirindhorn Anthropology Center. (2002). *Museums in the New Millennium*. Bangkok: Amarin Printing & Publishing.
- Phuangjan S., Kamsai S., Sanprasit K., & Chaiwong K. (2012). *Automatic Museum for youths*. Bangkok: National Research Council of Thailand. 228.
- Silprasert W. (2014). Values and Processes of Establishing Local Museums as Community Learning Centers: A Case Study of Baan Kubua Museum, Ratchaburi. *Academic Service Journal Prince of Songkhla University*. 25(1). 58.
- Sisang S., et al. (2005). *Lifelong Learning: Museum*. Bangkok: Office of National Educational Council. 81.
- Valaya Alongkorn Rajabhat University. (2010). *A Manual of Child-center-based learning*. Bangkok: Tian Watana Printing. 38.
- Wacharaboon S. (2011). *Museum, the Learning Sources: Cases in England*. Bangkok: Office of National Educational Council. 35.
- Yodkaew Y., Poonsawad W., & Suksakon P. (2010). The Development of Learning Management Model on Buddhism during Dvaravati Based on Phra Pathom Chedi National Museum as a Learning Source. *Proceedings of the 7th Academic Conference of Kasetsart University Kamphaeng Saen Campus*. 1071.